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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/534,811	05/13/2005	Kia Silverbrook	MJT003USNP	9045
24011 7590 10/09/2007 SILVERBROOK RESEARCH PTY LTD 393 DARLING STREET BALMAIN, 2041 AUSTRALIA			EXAMINER LEGESSE, HENOK D	
			ART UNIT 2861	PAPER NUMBER
			MAIL DATE 10/09/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/534,811	Applicant(s) SILVERBROOK, KIA	
	Examiner Henok Legesse	Art Unit 2861	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on 15 August 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2,4-10,12-17,19-25,27-32,34-39 and 41-44 is/are pending in the application.
- 4a) Of the above claim(s) 3,11,18,26,33 and 40 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2,4-10,12-17,19-25,27-32,34-39 and 41-44 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
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| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Double Patenting

1. A rejection based on double patenting of the "same invention" type finds its support in the language of 35 U.S.C. 101 which states that "whoever invents or discovers any new and useful process ... may obtain a patent therefor ..." (Emphasis added). Thus, the term "same invention," in this context, means an invention drawn to identical subject matter. See *Miller v. Eagle Mfg. Co.*, 151 U.S. 186 (1894); *In re Ockert*, 245 F.2d 467, 114 USPQ 330 (CCPA 1957); and *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970).

A statutory type (35 U.S.C. 101) double patenting rejection can be overcome by canceling or amending the conflicting claims so they are no longer coextensive in scope. The filing of a terminal disclaimer cannot overcome a double patenting rejection based upon 35 U.S.C. 101.

2. Claims 1-2,4-10,12-17,19-25,27-32,34-39,41-44 are rejected under 35

U.S.C. 101 as claiming the same invention as that of claims 1-44 of prior U.S. Patent No. US 6,672,709 B1. This is a double patenting rejection.

Below is a table of comparison between independent claims of patent US 6,672,709 B1 and the instant application.

Patent (US 6,672,709 B1)	Instant Application
1. An ink jet printhead comprising: a plurality of nozzles; and at least one respective heater element corresponding to each nozzle, wherein the printhead is configured to receive <u>a supply of an ejectable liquid</u> at an ambient temperature, and wherein	1. An ink jet printhead comprising: a plurality of nozzles; and at least one respective heater element corresponding to each nozzle, wherein the printhead is configured to receive <u>ejectable liquid</u> at an ambient temperature, and wherein

<p>each heater element is arranged for being in thermal contact with <u>a bubble forming liquid</u>,</p> <p>each heater element is configured to heat at least part of the <u>bubble forming liquid</u> to a temperature above its boiling point to form a gas bubble therein thereby to cause the ejection of a drop of the ejectable liquid through the corresponding nozzle; and</p> <p>each heater element is configured such that the energy required to be applied thereto to heat said part to cause the ejection of a said drop is less than the energy required to heat a volume of said ejectable liquid equal to the volume of a said drop, from a temperature equal to said ambient temperature to said boiling point.</p>	<p>each heater element is arranged for being in thermal contact with <u>the ejectable liquid</u>,</p> <p>each heater element is configured to heat at least part of the <u>ejectable liquid</u> to a temperature above its boiling point to form a gas bubble therein thereby to cause the ejection of a drop of the ejectable liquid through the corresponding nozzle; and</p> <p>each heater element is configured such that the energy required to be applied thereto to heat said part to cause the ejection of a said drop is less than the energy required to heat a volume of said ejectable liquid equal to the volume of a said drop, from a temperature equal to said ambient temperature to said boiling point.</p>
<p>16. A printer system incorporating a printhead, the printhead comprising:</p>	<p>16. A printer system incorporating a printhead, the printhead comprising:</p>

<p>a plurality of nozzles; and</p> <p>at least one respective heater element corresponding to each nozzle,</p> <p>wherein the printhead is configured to receive <u>a supply of an ejectable liquid</u> at an ambient temperature, and wherein</p> <p>each heater element is arranged for being in thermal contact with <u>a bubble forming liquid</u>,</p> <p>each heater element is configured to heat at least part of the <u>bubble forming liquid</u> to a temperature above its boiling point to form a gas bubble therein thereby to cause the ejection of a drop of the ejectable liquid through the corresponding nozzle; and</p> <p>each heater element is configured such that the energy required to be applied thereto to heat said part to cause the ejection of a said drop is less than the energy required to heat a volume of said ejectable liquid equal to the volume of a</p>	<p>a plurality of nozzles; and</p> <p>at least one respective heater element corresponding to each nozzle,</p> <p>wherein the printhead is configured to receive <u>ejectable liquid</u> at an ambient temperature, and wherein</p> <p>each heater element is arranged for being in thermal contact with <u>the ejectable liquid</u>,</p> <p>each heater element is configured to heat at least part of the <u>ejectable liquid</u> to a temperature above its boiling point to form a gas bubble therein thereby to cause the ejection of a drop of the ejectable liquid through the corresponding nozzle; and</p> <p>each heater element is configured such that the energy required to be applied thereto to heat said part to cause the ejection of a said drop is less than the energy required to heat a volume of said ejectable liquid equal to the volume of a said drop, from a temperature equal to</p>
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<p>said drop, from a temperature equal to said ambient temperature to said boiling point.</p>	<p>said ambient temperature to said boiling point.</p>
<p>31. A method of ejecting a drop of an ejectable <u>fluid</u> from a printhead, the printhead comprising a plurality of nozzles and at least one respective heater element corresponding to each nozzle, the method comprising the steps of:</p> <p>receiving a supply of an ejectable liquid, at an ambient temperature, to the printhead;</p> <p>applying heat energy to at least one heater element corresponding to a said nozzle;</p> <p>heating that at least one heater element, by the step of applying heat energy, so as to heat at least part of <u>a bubble forming liquid</u> which is in thermal contact with the <u>at least one heated heater element</u> to a temperature above the boiling point of the</p>	<p>31. A method of ejecting a drop of an ejectable <u>liquid</u> from a printhead, the printhead comprising a plurality of nozzles and at least one respective heater element corresponding to each nozzle, the method comprising the steps of:</p> <p>receiving a supply of an ejectable liquid, at an ambient temperature, to the printhead;</p> <p>applying heat energy to at least one heater element corresponding to a said nozzle;</p> <p>heating that at least one heater element, by the step of applying heat energy, so as to heat at least part of <u>the ejectable liquid</u> which is in thermal contact with the <u>heater element</u> to a temperature above the boiling point of the <u>ejectable liquid</u>;</p>

<u>bubble forming liquid</u> ; generating a gas bubble in the <u>bubble forming liquid</u> by said step of heating; and causing a drop of the ejectable liquid to be ejected through the nozzle corresponding to the at least one heater element by said step of generating a gas bubble, wherein said applied heat energy is less than the energy required to heat a volume of said ejectable liquid equal to the volume of said drop, from a temperature equal to said ambient temperature to said boiling point.	generating a gas bubble in the <u>ejectable liquid</u> by said step of heating; and causing a drop of the ejectable liquid to be ejected through the nozzle corresponding to the at least one heater element by said step of generating a gas bubble, wherein said applied heat energy is less than the energy required to heat a volume of said ejectable liquid equal to the volume of said drop, from a temperature equal to said ambient temperature to said boiling point.
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Regarding the independent claims 1, 16, and 31, the corresponding underlined limitations of the instant application stated above are either the same or does not contribute towards differentiating the scope of the claimed invention from that of the corresponding limitations in the U.S. Patent ('907). Thus, claims 1, 16, and 31 are rejected by claims 1, 16, and 31 of U.S. Patent ('907). This is a statutory double patenting rejection.

Regarding the dependent claims, claims 2,5,6,8,14,17,20,21,23,32, and 34 of the instant application are rejected by claims 2,5,6,8,14,17,20,21,23,32, and 34 of U.S.

Patent ('907) because the corresponding claims are claiming the same invention. This is a statutory double patenting rejection. Note that, limitations "ejectable liquid" and "bubble forming liquid" are essentially the same limitations.

Regarding the dependent claims, claims 4,7,9,10,12,13,15,19,22,24,25,27,28-30,35-39, and 41-44 of the instant application are rejected in view of claims 4,7,9,10,12,13,15,19,22,24,25,27,28-30,35-39, and 41-44 of U.S. Patent ('907). This is a statutory double patenting rejection.

3. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

4. Claims 1,4,6,7,9,12-16,19,21,22,24,27-32,35,36,38,41,42,44 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1,3,6,7,8,9,12-15,17, 20,21,22, 23, 25-28,29,30,33-36,39,40, and 41 of U.S. Patent No. US 6,824,246 B2. Although the conflicting claims are not identical, they are not patentably distinct from each other because the claimed inventions are the same with the exception that while claims in the U.S. Patent ('246) includes a limitation about a structure having thickness less than 5 microns, the claims of the instant application omits this limitation.

Below is a table of comparison between independent claims of patent US 6,824,246 B2 and the instant application.

U.S. Patent No. US 6,824,246 B2	Instant Application
1. An ink jet printhead comprising: a structure being less than 5 microns thick; a plurality of nozzles incorporated on the structure; and at least one respective heater element corresponding to each nozzle, Wherein each element is arranged for being in thermal contact with a <u>bubble forming liquid</u> , and	1. An ink jet printhead comprising: a plurality of nozzles; and at least one respective heater element corresponding to each nozzle, wherein the printhead is configured to receive <u>ejectable liquid</u> at an ambient temperature, and wherein each heater element is arranged for being in thermal contact with <u>the ejectable liquid</u> ,

<p>Each element is configured to heat at least part of the <u>bubble forming liquid</u> to a temperature above its boiling point to form a gas bubble therein thereby to cause the ejection of a drop of the <u>bubble forming liquid</u> through the nozzle corresponding to that element.</p> <p>7. The printhead of claim 1 configured to receive a supply of the <u>bubble forming liquid</u> at an ambient temperature, wherein</p> <p>each heater element is configured such that the energy required to be applied thereto to heat said part to cause the ejection of said drop is less than the energy required to heat a volume of said bubble forming liquid equal to the volume of the said drop, from a temperature equal to said ambient temperature to said boiling point.</p>	<p>each heater element is configured to heat at least part of the <u>ejectable liquid</u> to a temperature above its boiling point to form a gas bubble therein thereby to cause the ejection of a drop of the <u>ejectable liquid</u> through the corresponding nozzle; and</p> <p>each heater element is configured such that the energy required to be applied thereto to heat said part to cause the ejection of a said drop is less than the energy required to heat a volume of said ejectable liquid equal to the volume of a said drop, from a temperature equal to said ambient temperature to said boiling point.</p>
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<p>15. A printer system incorporating a printhead, the printhead comprising: a structure being less than 5 microns thick; a plurality of nozzles incorporated on the structure; and at least one respective heater element corresponding to each nozzle, wherein each element is arranged for being in thermal contact with a bubble forming liquid, and each element is configured to heat at least part of the bubble forming liquid to a temperature above its boiling point to form a gas bubble therein thereby to cause the ejection of a drop of the <u>bubble forming liquid</u> through the nozzle corresponding to that element.</p> <p>21. A printer system of claim 15 wherein the printhead is configured to receive a supply of the <u>bubble forming liquid</u> at an ambient temperature, and wherein each</p>	<p>16. A printer system incorporating a printhead, the printhead comprising: a plurality of nozzles; and at least one respective heater element corresponding to each nozzle, wherein the printhead is configured to receive <u>ejectable liquid</u> at an ambient temperature, and wherein each heater element is arranged for being in thermal contact with <u>the ejectable liquid</u>, each heater element is configured to heat at least part of the <u>ejectable liquid</u> to a temperature above its boiling point to form a gas bubble therein thereby to cause the ejection of a drop of the <u>ejectable liquid</u> through the corresponding nozzle; and each heater element is configured such that the energy required to be applied thereto to heat said part to cause the</p>

<p>heater element is configured such that the energy required to be applied thereto to heat said part to cause the ejection of said drop is less than the energy required to heat a volume of said <u>bubble forming liquid</u> equal to the volume of the said drop, from a temperature equal to said ambient temperature to said boiling point.</p>	<p>ejection of a said drop is less than the energy required to heat a volume of said <u>ejectable liquid</u> equal to the volume of a said drop, from a temperature equal to said ambient temperature to said boiling point.</p>
<p>29. A method of ejecting a drop of a <u>bubble forming liquid</u> from a printhead, the printhead comprising a plurality of nozzles and at least one respective heater element corresponding to each nozzle, the method comprising the steps of:</p> <p> providing the printhead, the printhead having a structure which is less than 5 micron thick and which incorporates said nozzles thereon;</p> <p> heating at least one element corresponding to a said nozzle so as to</p>	<p>31. A method of ejecting a drop of an <u>ejectable liquid</u> from a printhead, the printhead comprising a plurality of nozzles and at least one respective heater element corresponding to each nozzle, the method comprising the steps of:</p> <p> receiving a supply of an <u>ejectable liquid</u>, at an ambient temperature, to the printhead;</p> <p> applying heat energy to at least one heater element corresponding to a said nozzle;</p>

heat at least part of the bubble forming liquid which is in thermal contact with the at least one heated element to a temperature above the boiling point of the bubble forming liquid;

generating a gas bubble in the bubble forming liquid by said step of heating; and causing the drop of bubble forming liquid to be ejected through the nozzle corresponding to the at least one heated element by said step of generating a gas bubble.

34. The method of claim 29, comprising, prior to the step of heating at least one heater element, the step of receiving a supply of the bubble forming liquid, at an ambient temperature, to the printhead, wherein the step of heating is effected by applying heat energy to each such heater element, wherein said applied heat energy is less than the energy required to heat a

heating that at least one heater element, by the step of applying heat energy, so as to heat at least part of the ejectable liquid which is in thermal contact with the heater element to a temperature above the boiling point of the ejectable liquid;

generating a gas bubble in the ejectable liquid by said step of heating; and

causing a drop of the ejectable liquid to be ejected through the nozzle corresponding to the at least one heater element by said step of generating a gas bubble, wherein said applied heat energy is less than the energy required to heat a volume of said ejectable liquid equal to the volume of said drop, from a temperature equal to said ambient temperature to said boiling point.

volume of said <u>bubble forming liquid</u> equal to the volume of said drop, from a temperature equal to said ambient temperature to said boiling point.	
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In the instant claims ejectable fluid correspond to bubble forming liquid in the patent ('246).

Claim 1 of the instant application is taught by claims 1 and 7 of patent ('246).

Claim 16 of the instant application is taught by claims 15 and 21 of patent ('246).

Claim 31 of the instant application is taught by claims 29 and 34 of patent ('246).

Claims 4,6,7,9,12,13,14, and 15 of the instant application are taught by claims 3,6,8,9,11,12,13, and 14 of patent ('246).

Claims 19, 21,22, 24, 27,28,29, and 30 of the instant application are taught by claims 17, 20,22, 23, 25,26,27, and 28 of patent ('246).

Claims 32,35,36,38,41,42, and 44 of the instant application are taught by claims 30,33,35,36,39,40, and 41 of patent ('246).

Response to Arguments

5. Applicant's arguments filed 08/15/2007 have been fully considered but they are not persuasive.

Regarding the applicant's argument that the amendment made in the present application differentiate the claimed invention over the inventions claimed in US patent

6,672,709 is noted. However, the amended limitations in the claims are mere change of words having essentially the same meaning failing to differentiate the claimed inventions over the inventions claimed in US patent ('709), please see the statutory type double rejection above. Thus, the statutory type rejection in view of US patent 6,672,709 is maintained.

Conclusion

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Henok Legesse whose telephone number is (571) 270-1615. The examiner can normally be reached on Mon - FRI, 7:30-5:00, ALT.FRI EST.TIME.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew Luu can be reached on (571) 272-7663. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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09/26/2007



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